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COMMUNICATIONS

SO-CALLED GLASS-WORKERS' CATARACT OCCURRING IN OTHER OCCUPATIONS, WITH A REPORT OF TWO CASES*

BY

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CAPE TOWN

Introductory

THE condition known as glass-workers' cataract first began to receive attention in Great Britain some 18 or 19 years ago when Robinson, of Sunderland, published an account[1] of cases occurring in that locality. A further description[2] was published in 1907 and in July, 1915, the results of Robinson's observations were embodied in a paper entitled "Glass-workers' Cataract,"[3] read before the Oxford Ophthalmological Congress. Stated briefly, the chief facts brought out in this paper are, that persons exposed to incandescent molten glass or to continual furnace glare in the flattening of glass, suffer more than ten times as frequently as other people from cataract; that the characteristic feature of this type of cataract is opacity of the posterior cortical layers of the lens of varying size, within the pupillary area, in contradistinction to the more usual type in senile subjects where peripheral striae appear round the margin of the lens, the central area remaining clear; that the changes in the lens substance are brought about by the action of the infra-red or heat rays.

* Being a paper, with demonstration of cases, read at a meeting of the British Medical Association, Cape of Good Hope (Western) Branch, Cape Town, on July 28, 1922.

Attracted by Robinson's first publication, Dr. T. M. Legge,[4] H.M. Medical Inspector of Factories, determined to investigate the subject for himself and brought the matter before the Departmental Committee appointed by the Home Office to enquire into the question of industrial diseases. As a result of this committee's work, a recommendation was included in its second report (1908) to the effect that " cataract in glass-workers " should be added to the Schedule of Industrial Diseases for which compensation may be claimed. The Home Office referred the aetiology of cataract in glass-workers to the Royal Society, a committee of which was appointed in 1908 to investigate the condition. As a result of the activities of this committee several researches were undertaken, the work in particular of Sir William Crookes,[6] Parsons,[7] Martin,[8] and Hartridge and Hill[9] being of much value in the elucidation of the problem. In its report,[10] published in 1921, the results of the investigations of the committee are summarized as follows :—

1. That the luminous rays are not the cause of the disease.
2. That ultra-violet radiation is not the cause, in so far as any direct action upon the lens is concerned.
3. That the evidence is strongly in favour of the view that heat is the active agent.
4. That it is uncertain whether the heat radiation acts directly on the substance of the lens, or indirectly by disturbing the nutrition of the lens.
5. That possibly ultra-violet radiation may play some part in the causation by indirect action on the nutrition of the lens.

It should perhaps be pointed out here that the liability to cataract of glass-workers was denied by Snell[5] in a communication published early in 1907 giving the results of his own investigations. His experience, however, was limited to flint-bottle and pressed-glass workers, in which processes the heat is not so great as that experienced in the making of ordinary (heavy) bottles. That the former class of glass-worker is less liable to cataract is admitted by Robinson, whose original observations were more than substantiated as the result of the enquiries directed by Legge.

Within the last few years it has become abundantly clear that the occurrence of cataract among industrial workers who are exposed in the course of their employment to continuous heat and glare, is not confined to glass-workers. To Cridland of Wolverhampton belongs the credit of having demonstrated the occurrence of so-called glass-workers' cataract in a " puddler," i.e., iron smelter, the first case of this kind being shown at a meeting of the Ophthalmological Section of the Royal Society of Medicine in 1915[11]. In the following year he described a similar case, also

in a " puddler "[12], and since that time has observed others of the same nature at the Wolverhampton Eye Infirmary[13]. As the result of his experience Cridland has little doubt that the type of cataract known as glass-workers' can occur in occupations other than that of glass-blowing, one being that of " puddling."

St. Clair Roberts, of Dudley, was the next to describe cases of cataract[14] occurring in an industry other than that of glass-blowing. His cases, about 25 in number, were collected among men and women engaged in chainmaking, and showed cataract resembling in clinical features the type of so-called glass-workers' cataract.

More recently, Healy, of Llanelly, has drawn attention to the prevalence of lenticular opacities in the eyes of tinplate millmen[15]. From the statistics available it would appear that the incidence of cataract in this class of workman is abnormally high. An interesting point mentioned by Healy is that in his experience lenticular changes attributable to the action of radiation do not develop until the workman has been engaged at his particular occupation for a period of 15 years. This at least applies to tinplate workmen. In each of the cases to be described, it will be observed that the patient had been engaged at his or her work for a similar period before the onset of lens changes was first noted.

South Africa being a producing rather than a manufacturing country, there exist in it few industries in which conditions likely to cause damage to the eyes through radiation by heat or glare are present. However, Brinton, of Johannesburg, recently reported[16] that he had met with cases of cataract of the same type as that found in glass-workers, in gold-smelters and assayers. But to anyone acquainted with industrial conditions in South Africa it must be obvious that, excluding the mining industry, there are few occupations in which the workman is exposed over long periods to the deleterious effects of intense heat or light such as is the case in the large industrial areas of Great Britain. For the reasons stated, the cases to be described are of more than passing interest.

Cases

CASE 1. Mr. O. D., *aet.* 38, a machineman employed at the South African Railway Works, Salt River, was recommended by Dr. H. W. Stephens, Railway Medical Officer for that area, to see a specialist owing to failing sight. In the absence of Dr. J. S. du Toit, to whom he had been referred, he was examined by the writer on May 30, 1922. His complaint was that although he could see " well enough " in the distance, he was able no longer to find his number on the check board at the works. This inability was of one week's duration. He was not aware of any

failure of sight previous to this. On examination his condition was found to be as follows:—

R.V. 4/60, L.V. 6/36 partly; nothing abnormal to note on external examination except slight latent divergence revealed by the screen test; by oblique illumination the lens of each eye appeared somewhat hazy; no view of the fundi was obtainable; with the mirror at a distance it was evident that lenticular opacities were present.

After instillation of a mydriatic, the lens condition could be seen clearly. This in each eye consisted of a posterior cortical opacity, centrally situated with respect to the pupil and limited in extent. The opacity was somewhat irregular in shape, of cobweb-like structure peripherally, but with a denser central portion suggesting a Maltese cross in outline. Radiating from the centre of the lens and situated in the posterior cortical layers were a number of sectors, five to eight, surrounding the opacity as the spokes of a wheel the hub, and increasing in width towards the periphery. These additional changes could be seen only with a plane mirror, the concave mirror showing merely diffuse lens haze. The condition of the right eye was, if anything, a little more advanced than that of the left. The fundi, now visible though not too clearly, were normal. The nature of these changes suggesting cataract of the glass-workers' type, enquiry was directed to the nature of the patient's work, a description of which at once confirmed the diagnosis which had occurred to the writer. The man had been employed for the past 15 years in the tyre shop in which steel tyres are removed from or fitted to the wheels of rolling-stock by means of a furnace heated by "blow lights." In order to obtain an exact idea of the nature of this work the writer paid a visit to the tyre shop in question. The furnace consists of a circular metal casing about 9 inches in depth in which the tyre to be fitted is placed. Arranged at regular intervals round this casing and directed into its interior are 6 jets fed by crude oil and compressed air, each jet emitting a roaring tongue of flame which plays upon the contained tyre. The latter is heated in this way for 7 to 30 minutes, when it is removed and another one placed in position, this process continuing during the whole of the working day. The heat thrown out by the apparatus even at a distance is very great, but the glare is not pronounced, the tyre not being raised above black heat. Every now and again the machineman has to approach to within a distance of 1 to 2 feet from the casing in order to re-light one or other of the jets which tend to go out. In doing this he was observed instinctively to shield his eyes with the palm of his hand. Further interrogation of the patient elicited the facts that his working hours had been from 7.15 a.m. until 5 p.m., that previously he had worked for 2 to 3 days at a stretch

at the furnace with intervals of from 2 to 5 days away, but that for the last 18 months he had attended the furnace continuously from day to day. The patient's wife stated that frequently on returning from work in the evening his eyes had appeared irritated and the skin surrounding them reddened. For permission to present this case the writer is indebted to Dr. J. S. du Toit.

CASE 2. Mrs. L. T., *aet.* 64, presented herself for examination at the Salt River Free Dispensary on July 19, 1922. She complained that her sight had been failing gradually during the last 3 or 4 years, and had become so bad that she was no longer able to work. Vision in each eye was reduced to counting fingers only. By daylight and on oblique illumination well-marked lens haze seemed to be present, such as is found in the senile lens. By ophthalmoscopic examination no view of the interior of either eye was possible. On dilating the pupils the condition was revealed. In each eye there was a posterior cortical lens opacity situated centrally, dense and circular in shape, suggesting in appearance an inkblot to which this particular type of opacity has been likened by Legge. The opacity in the right eye was a little the larger of the two. The remainder of the lens was clear, but the effect of internal reflection from the opaque spot was puzzling at first; as the mirror was moved from point to point, ripples as it were of apparent opacities encircled the peripheral margin of the lens. There were no sectors or striae to be seen. The type of lens change present immediately suggested that associated with the glass-worker. Questioned as regards the nature of her work, the patient explained that she had been engaged in laundry work for the past 15 years. This entailed ironing clothes by hand with the ordinary flat iron which she had been in the habit of doing from 7 a.m. until 5 p.m. on three days in the week for a period of 15 years. She herself had thought that the work was affecting her sight, and she remarked on the heat which made her mouth dry and was felt on the cheek. She usually inclined her head slightly to the right at work, so that the right eye was a little nearer to the source of heat than the left.

Remarks

With regard to the two cases here described, there can be no doubt but that the first, i.e., in the machineman, exhibits a condition agreeing in every respect with that typically seen in glass-workers as first pointed out by Robinson. The clinical picture of the lens opacity, the bilateral involvement, the age of the patient, the nature of his work and the period of time he had been engaged at it, all prove conclusively that the cataract can be ascribed to no other cause but that of heat radiation.

In the second case, i.e., that of the laundress, the diagnosis is

not so obvious and the question of the condition having been brought about solely by heat is at least debatable. That cataract of the senile type may commence in the posterior cortical layers of the lens as a central opacity is admitted, but most observers agree that this is unusual if not rare. In the present case the lenticular opacities correspond with the description given by Legge of those frequently observed by him in glass-workers, namely, resemblance to a blot of ink. The patient's age proves nothing but merely lends force to the argument in favour of the opacities being of an uncommon senile type. The fact that she had been exposed to constant heat, though to be sure of no very great degree, for a period of 15 years, together with the clinical picture of the lens changes present and the involvement of both eyes to an almost equal extent, entitles one, in the writer's opinion, to include the case in the category of glass-workers' cataract.

Up to the present, cases of so-called glass-workers' cataract have been described as occurring in iron-smelters, gold-smelters, chainmakers and tinplate millmen, in addition to glass-workers. To this list are added now cases in a machineman and a laundress. It would appear, therefore, that the condition may occur in many different occupations, no doubt more frequently in some than in others, the all-important factor being the question of exposure to radiant heat over a sufficiently long period of time.

In order to avoid confusion in nomenclature, brought about by affixing labels to particular groups of industrial cataract, it would be more scientific to adopt a name common to all by means of which this special type of lens opacity could be classified according to its mode of production, namely, the effect of radiation. No more appropriate term suggests itself than that of " ray cataract " first proposed by Cridland[11] for the reasons mentioned by him. Further investigation into the incidence of ray cataract is called for, especially in regard to its frequency in the various industries or occupations in which workers are subjected to prolonged and continuous exposure to radiant heat and light.

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ON MACULAR PERCEPTION IN ADVANCED CATARACT

BY

GEORGE YOUNG

COLCHESTER

IN the June, 1917, number of this Journal I published a brief note on a test for macular perception in advanced cataract, which had proved useful to me. To-day I wish to describe more fully the way in which I perform it now, and, as a prelude, will introduce such a concrete case as would call particularly for a test of this nature in practice: one in which the question becomes of vital importance, and the conditions make it most essential to be able to form a sound opinion on the macular function before advising an operation, there being no second eye to call upon in case of a disappointing result, and the possibility of bilateral macular disease being present.

A patient presented himself to me with a senile cataract in his right eye, so advanced that the whole nucleus of the lens was opaque, and the red reflex was limited to the periphery. No trace

of fundus details in the central portion could any longer be seen. Vision equalled hand movements, light projection was good, the tension was on the soft side. His last prescription—with valued signature—was – 18 D sph., and the patient stated that he never could see signs, or recognize people across the street, even with

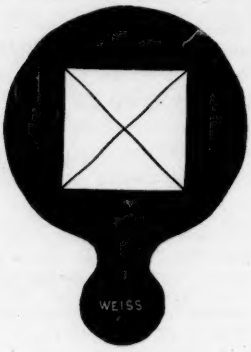

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

glasses. The left eye was less myopic, with the lens intact, but showing extensive myopic choroiditis. It had no distant form vision with any glass, and no Jaeger between his punctum remotum and punctum proximum. Right on the macula a patch of pigmented choroiditis had developed, three cornered, shaped somewhat like the map of Sicily, about half a dozen vessels' diameters in size. With this condition, and also a poor physique, a bad health record, angiosclerosis and high blood pressure, and the patient's additional statement that his right eye had always been his " poor " eye, we could ordinarily hold out but faint hopes of a

successful operation. Surely we exonerate any surgeon who would hesitate to advise operation, and such had been the case here.

I select this case, though I might choose others which ended happily, for the reason that it is hardly possible to find one in which it became more essential to form a conclusive opinion, as to the state of the second macula lutea. This patient passed my macular test brilliantly. It was the one clinical sign which determined me not only to urge an operation, but also enabled me to prognosticate a favourable result. I performed a combined extraction of the right lens with an intracorneal incision, on July 4, 1921. The visual result was brilliant, and lasted so till my observation of October 10, 1921, which was as follows:—

R.V. unaided, 6/36 c. + 1.50 D. Sph. ⊂ − 6.50 D. Cyl. 75° 6/9 and J.1 c. +6.50 D. Cyl. 165°.

He went about ordinarily without glasses, seeing better with the naked eye than he had ever seen before with glasses. (That he subsequently, through unpardonable carelessness and bad behaviour, detached the whole lower half of his right retina, and that neither repeated galvano-cautery nor rest has been able to cure it, is indeed a sad tragedy, but it does not affect the value of the macular test.)

The test I now carry out as follows:—The outfit required is very simple, consisting of four discs which fit the trial frame.* The first disc to be used is a cross thread and merely serves to secure an exact centering of the trial frame on the patient's face. I use Lang's frame, which enables one with a few simple movements, by means of its two set screws, to get the cross thread exactly opposite the centre of the pupil.

This disc is then removed and the next is put in its place, which is perforated by a single pinhole exactly at the centre. In a dark room the patient is then brought quite close up to a frosted electric bulb, so close that the disc all but comes in contact with it. The Thorington chimney, with the diaphragm at its widest, is admirable for this purpose. The patient is then requested to look for a spot of light, which often is said to look like a little moon. Then, if he has seen it, the next disc, which is perforated by two pinholes, is placed in position, one at each end of a diameter of an exactly central circle of 1.5 mm. radius—in other words, two pinholes 3 mm. apart—and the patient is requested to say how many spots or moons he sees now. If he sees them they may look like two moons overlapping each other, and if the disc is now revolved in the frame he can be made to say when the moons are side by side, or oblique, and which way oblique, or whether they are one

*To be obtained from John Weiss & Son, Ltd., 287, Oxford Street, W.1

above the other. Finally, the disc with three holes, one at each angle of an equilateral triangle, also within a circle of 3 mm. diameter, is chosen. Three overlapping moons should be seen, and by rotating the disc the patient may state whether they stand with one above and two below—like A—or two above and one below—like V.

If this test is negative it does not exclude a sound macula. But if it is positive I believe it certainly must prove that the function of the macula is present, for no such precise statements could be given without direct fixation. Simple experiments show that accurate counting without absolutely direct fixation is impossible. In private practice and with the more intelligent out-patient I have found the test very useful and easy, and when it is positive I now recommend my patient to undergo an operation with far more conviction than formerly, feeling, as I do, that there is definite clinical evidence for the soundness of the macula lutea. Before I devised this test I was never convinced. I therefore hope it will prove useful and helpful to many others.

MONOCULAR OPTIC NEURITIS

BY

LESLIE BUCHANAN, M.D.

GLASGOW

IN August, 1919, I was asked to see a young woman who had suddenly lost the sight of the right eye. I saw her on a Monday night and she gave the following history:—

On the Saturday previous she had gone a long motor drive without any adequate preparation in the way of wraps, and was sitting with her right side to the engine. It was a very cold day and she felt numb and chilled when she reached home. She had a slight headache and retired early that evening. Next morning the headache was still present when she rose, and whilst dressing she discovered that the vision of the right eye was not so good as it had been.

The defect of vision alarmed her, and she stayed indoors all day but the sight got steadily worse, and, by evening, she could see very little with this eye. She decided to come home (from Harrogate) at once and did so next day.

On arrival she saw her medical adviser, who found that she was almost entirely blind of the right eye, and advised her to see an ophthalmic surgeon without delay. She came to me that evening and I found that perception of light, even, was abolished.

The left eye had normal vision and the patient was certain that the right had formerly been perfect also. There was no external appearance of anything wrong. The pupil of the right eye did not react to light but did consensually. Ophthalmoscopic examination showed intense optic neuritis without haemorrhage or solid exudate; quite a typical papilloedema.

Close questioning brought out the fact that there was a feeling as of heavy pressure in the orbit, which was made worse by movement. There was also some tenderness on pressure on the eyeball. There was no paralysis of any muscle and no other symptom, such as vomiting, and I came to the conclusion that there was no cerebral cause for the neuritis. The opinion which seemed to be most reasonable was that there was a localized, non-suppurative inflammatory focus in the orbit, and probably deeply seated in it, which was the result of exposure to cold wind and so-called rheumatic in type, and that this was the cause of the neuritis.

The patient was ordered rest in bed in a dark room, vigorous blistering of the right temple, and a mixture containing acetate and iodide of potassium and nux vomica internally.

I saw her again on September 24 having had reports by telephone in the interval, and found the vision of the right eye 4/9 unaided and 4/6 aided. Her husband told me in December, 1919, that she had completely recovered and had gone to England for a month, and I have since learned that she has remained quite well.

On May 13, 1921, I saw a young lady from the North of Scotland who averred that three weeks previously she had lost the sight of the left eye. The loss had been discovered quite suddenly on rising one morning and was associated in her mind with the fact that she had been looking at an eclipse of the sun sometime before. (She had used both eyes and had a smoked glass to protect her eyes.)

The girl had seen an ophthalmic surgeon who had recognized the neuritis but evidently considered that it was probably due to some intracranial condition, and told the patient's mother so. They then decided to have another opinion.

When I saw her the patient was only able to count fingers at six inches distance with the left eye. The right eye was normal in all respects, and the girl was perfectly healthy. Ophthalmoscopic examination showed intense papilloedema in the left eye and a normal fundus in the right. Remembering the former case, I asked if there was any history of exposure, but was unable to elicit any at that time.

The treatment ordered was the same as in the former case. A week later I saw her and found the vision 4/12. There was no difference in the state of the optic nerve. At this date I was told

that the patient remembered that a week prior to the discovery of the defect she had gone a long motor drive on a very cold day without adequate preparation in the way of wraps. She was " chilled to the bone " she told me.

On May 26 the vision was still further improved to 4/8 and she went home and kept up the treatment under the care of her own doctor. I did not hear of her again until December, when she had some deafness with noises in the head on the left side. These symptoms were not due to the presence of wax in the ear because syringing did not give relief.

On April 16, 1922, I received a telegram from her father to the effect that the right eye had suddenly become blind, and asking for advice. I advised them to repeat the former treatment and come to town as soon as possible. She came to town on April 22, and was in a " home " for three weeks. R.V. counts fingers at six inches only. L.V. 4/4.

O. E. R., optic nerve deeply engorged and swollen to 1.5 D. There were no haemorrhages or other exudates. Vessels tortuous.

O. E. L., optic nerve a little pale and sharply outlined with a little pigment alteration at the other side.

The treatment was continued as before.

I had the girl carefully examined by a physician and by an aurist, but the reports were both negative as far as any cause was concerned.

The patient stated that she was sure that the sight was perfect on the night of April 14, and that it was nearly gone on the morning of April 15, and she could think of no reason in the way of exposure.

The optic nerve became more swollen and ultimately showed distinct papillitis, but never so pronounced as the left eye had shown.

In the course of four weeks she had recovered almost completely and I allowed her to return to her home, and I have learned that she is now entirely recovered.

On October 28, 1921, I was asked to see a lady who complained of loss of vision of the right eye and pain in the right side of the head of about ten days' duration. She had been kept in bed and had treatment from her doctor, but had refused to have special advice.

I found that the vision of the right eye was reduced to the ability to count fingers at two feet, whilst that of the left eye was 4/4.

O. E. showed optic neuritis of moderate degree, elevation 2 D. The history was that on October 17 she had been out and got wet and cold, and that she had neuralgic pain next day. On the 18th inst. there was a haze over the sight which increased each day till the sight got quite dim.

Judging the condition to be the same as that of the foregoing cases, I advised the same treatment as in them. I did not see her again until December 23, when I found the vision of the right eye to be 4/5, and of the left 4/3. The doctor has since then reported that she has quite recovered.

The last case is that of a young girl whom I saw at the Glasgow Eye Infirmary on January 28, 1922, sent on account of blindness of the right eye. There was a history of a blow from a snowball some days before, and the girl thought that this was the cause of the blindness. The vision was reduced to nil or doubtful light perception. There was intense papilloedema, the height of the nerve being fully 3 D. Under treatment precisely similar to that of the other cases the vision gradually returned, and after two months was 4/9. The optic nerve remained congested for three months, and then became pale, but the vision has kept up well, and on August 7, 1922, was 4/5.

These four cases have all occurred in women of under middle age, healthy and with no other symptom to indicate that there was any other cause than cold and inclement weather. No case, so far as I can recollect, which was similar to these in a man, has come under my notice, although I can be sure I had seen others in women before.

The fact that light perception was abolished or doubtful in two of the cases indicates the existence of a high degree of pressure, probably far back in the orbit. It is very interesting, therefore, that with so much disturbance of the optic nerve there was no other symptom such as would arise from interference with the function of either nerves or muscles. This was so in most of the cases recorded by Nettleship and by Jessop.

Nettleship's[1] cases were mostly retrobulbar neuritis, but some showed marked intraocular changes also. Jessop's[2] cases were all intraocular, but possibly began as retrobulbar cases. All may be due to the same cause only varying in position. Nettleship considered that the cases were rheumatic in origin, and Jessop that they were toxaemic. Juler[3] recorded a case and thought that it was syphilitic in origin.

These cases are probably all acute retrobulbar neuritis to begin with, but become intraocular, but they are not the same as those which follow on catarrhs which result in infection of the ethmoidal sinuses. In the latter there is sometimes exophthalmos and at others paralysis of muscles to indicate the existence of an inflammatory focus. Cases are frequently seen also in which there is paralysis of an ocular muscle or nerve which can be attributed to no other cause than cold, and such cases yield to treatment quite the same as that used in the cases under consideration. Weeks[4] tells us that there is a form of optic neuritis which he calls

rheumatic, and which is due to exposure to cold. It seems, therefore, to be reasonable to assume that in these cases there is a localized fibrositis either in the nerve or round it, and that the precise position of the lesion may be the determining cause of the particular symptoms found in the case.

The prognosis seems to be distinctly favourable.

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SIDEROSIS*

BY

J. LOCKHART GIBSON, M.D. Edin., M.R.C.S. Eng.

BRISBANE

SIDEROSIS may be defined as a coloration of the eye by fine rust particles in suspension or solution in the fluids of the eye, and associated with a consequent mild but advancing inflammatory state of the uveal tract and gradual destruction of sight unless the particle of steel can be removed before the inflammatory process has advanced too far.

In a paper on the use of the Giant Magnet I contended that small particles of steel in the outside coats of the eye, not in connection with the fluids of the eye, might lie dormant and without causing irritation, because they were not apt to rust while they remained comparatively dry. But that particles of steel bathed in the fluids of the eye, especially if in the direct course of intraocular circulation were certain sooner or later to give rise to irritation because they were sure to rust, and siderosis would consequently result with its serious consequences. It is possible and perhaps even likely that those in the outer coats will also eventually cause trouble.

It has appeared to me that if this contention can be sustained it will mean that many small iron or steel fragments in the brain and other parts of the body which gave rise to few or no symptoms at first may be supposed to cause much irritation later on, perhaps after two or three years, and that wounds supposed to have become quiescent may ultimately prove most serious. I have myself had examples of small particles of steel in a lens whose capsule had closed as soon as the particle had been admitted, which, quiescent

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at first, perhaps for a year or more, gradually caused opacity, and coloration of the opaque lens, and then irritation from an extension of the siderosis beyond the lens to the neighbouring tissues of the eye.

In each case the irritation subsided when the lens and its piece of steel were removed.

In the case of a piece of steel in the lens it must be admitted that in no part of the eye except in the sclerotic could it be more removed from the fluids of the eye.

I have had an example of a small piece of steel in the retina lying dormant, and the eye thought to be uninjured for nearly 18 months, and then of siderosis gradually developing, and being quite noticeable after 18 months, with sight diminished to 6/12 partly, because of haziness of the media. I removed this piece of steel by a giant magnet without injuring the lens, with persistence of V. 6/18 for 3 months, and even improvement to 6/12, to be followed by gradual general hardening and flattening of the lens, at first without increasing opacity, but with marked increasing hypermetropia, up to 4 dioptres; gaining with this correction 6/12; but followed then by gradual general opacity of the lens, and loss of sight, until the lens was removed. (This case was shown to the Section.)

(1) Lieut. A. Aged 22.

Seen April, 1918. Eighteen months after being badly wounded in the back, complained of declining vision for three months, and of change of colour of left eye. No history of injury to the eye. Distinct siderosis noted. Bright siderotic spots were seen on anterior lens capsule under cover of the edge of the iris, forming a ring. A very fine general haziness surrounded the lens. In an area of injured retina a foreign body was seen towards periphery of fundus below the disc. Vision 6/18 partly. I removed a piece of steel, 2.4 milligrammes, from the retina. Adhesion of iris to lens prevented it from coming through the pupil. It was pulled through the iris near its periphery by the giant magnet, when pulled out of the corneal wound drew the radiate strip of iris with it, the pupillary end of the strip being attached to the lens. Vision improved to 6/18, and gradually to 6/12 for four months. But the lens gradually became flatter as evidenced by increasing hypermetropia to 4 dioptres. Then the lens became opaque. It has been made to dissolve, but there is still a fine siderotic membrane, and vision is only 6/60 as yet. I expect to get good vision.

I have removed a small piece of steel from the vitreous or retina of a siderotic eye with an opaque siderotic lens two years after it had entered the eye, although the patient denied the possibility when I told him that the eye contained a piece of steel. The

lens was subsequently removed with resulting good vision 6/18, to be further improved by a needling. (Also shown to the Section. Subsequent vision 6/9.)

I have removed many minute pieces of steel from the cornea and sclerotic of a returned soldier 30 months after they had lodged there, because they had started to cause siderosis around each particle. (Also shown to the Section.)

(2) W. Aged 31. Consulted me May, 1919.

History that the eye had been hit by a piece of putty two years before. Sight bad for last few months; only perception of light now. There was marked general siderosis and rust stained opaque lens, as also a small spot in iris which looked like a hole in it. I assured him that the eye contained a piece of steel; probably in its fundus. Vision—perception of light.

Minute piece of steel was brought forward and through the pupil by giant magnet, after several applications, but at the first sitting; then removed from the anterior chamber. Lens subsequently removed through ordinary cataract incision. Corrected vision 6/18. A fine wrinkled membrane remained in the pupil and fine vitreous opacities. This illustrates that probably siderosis loosened the piece of steel and made it more easy to dislodge. Failure to remove it would have meant gradual destruction of the eye. Needling of fine membrane will probably result in 6/9 of vision. Note fine hole in iris through which foreign body passed after entering the eye. (Later: Vision 6/9 after needling.)

I had a case at Lemnos, who was brought from Gallipoli with one eye so damaged that I had to remove it next day; the cornea of the other eye contained several minute white foreign bodies subsequently extracted: probably particles of the explosive. Two fingers of his right hand had been amputated at Gallipoli, he had several pieces of steel in his other hand, and a large piece in the eyebrow of the eye which had not to be removed and which ultimately obtained 6/6 of vision. He did not then complain of his throat, perhaps because there was so much else to call attention to, but there was no alteration in his voice.

Two years afterwards in Brisbane the piece of steel was removed from his brow, and the two pieces from the palm of his otherwise uninjured hand, and a piece from under the skin over the carotid vessels in his neck. These had then begun to cause a little irritation and discomfort. Still no throat trouble at all.

Fully three years after injury he began to cough up blood first, and then to have great irritation in his larynx. Dr. Robinson, under whose care he came, had detected by X-rays a large piece of steel behind his cricoid cartilage, and was able to extract it. Unfortunately it had set up so much irritation that the man may be unable to do without a tracheotomy tube. Why did this piece

of steel only begin to obtrude itself and irritate more than three years after it became lodged at the back of the larynx?

When at Lemnos, and when I removed the piece from his brow two years later in Brisbane, he did not even complain of his throat or have any throat symptoms. Surely the irritation began when the steel rusted and the rust particles became dissolved in the surrounding tissues. When at Lemnos I asked him how he got his wounds, he told me that he was carrying up some bombs to the front trenches and that one of them burst. On my exclaiming, "It's hard lines to be injured by one of your own bombs," he replied, "Oh, I don't know—I've '*done for*' a lot of Turks with those bombs." No wonder our men did so well when that was their attitude!

It appears to me that the lessons from these cases are two-fold. First, that pieces of steel near vital tissues should not be left if they can be extracted. Second, that if it proves impossible to remove a piece of steel from the fundus with a giant magnet soon after the injury, the best time, of course, a further attempt should be made when siderosis supervenes, because the onset of siderosis probably loosens the piece of steel in its bed and makes it more likely to move forward when the giant magnet is applied. The cases referred to, indeed, suggest this conclusion.

Is it not possible that a giant magnet may prove of use to remove small, otherwise inaccessible, pieces from the brain through a trephine wound?

OPHTHALMOMYIASIS

BY

DR. A. TICHO

JERUSALEM

OPHTHALMOMYIASIS is the name used to describe the several symptoms caused in the eye and its annexes by the larvae of diptera. According to the place in which they are found we can distinguish (C. Behr) between an external ophthalmomyiasis when the larvae are found in the lids, lacrimal sac and conjunctiva, i.e., outside the eyeball, and an internal ophthalmomyiasis when the globe has been penetrated. The latter group may be further subdivided into an anterior and a posterior internal ophthalmomyiasis; in the former the larvae have not penetrated beyond the anterior chamber, but have done so in the latter.

The disease is said to be common on the shores of Mexico, Peru, Chili, and, according to reports from Dr. Kuznezow and

Dr. Goldschmidt, also in Central Asia. It is of rare occurrence in other parts of America and Africa, and very rare in Europe.

Six cases of external ophthalmomyiasis have come under my personal observation in the last ten years. In all of these cases the history was very similar. The patients all stated that something struck against the eye and was immediately followed by pain. The pain was described as severe and of a scratching or rubbing nature. In two of the cases the pain was described as not of any severity, in one case probably on account of the presence of trachoma. The suggestion that the comparative lack of pain was due to the presence of trachoma was based on my experience in schools where I found that I could remove foreign bodies such as flies, lice, wings of beetles, etc., from the conjunctiva of trachomatous children without any complaint of pain or subsequent irritation of the eye. The case in which trachoma was present only presented slight symptoms of the irritation due to a foreign body. In the other case in which pain was not severe the infection was only slight. With the exception of the trachoma case all the others showed marked oedema of the lids, conjunctival and ciliary injection, chemosis, swelling of the fornices and small haemorrhages of the conjunctiva. Follicles have been noted in these cases, but were not present in my series.

The diagnosis was made by the discovery of longish bodies of a whitish colour with a darker tail possessing worm-like movements. These bodies were situated at the limbus, in the tarsal conjunctiva and the fornix. They escaped on attempting to remove them with a Daviel spoon, but were paralysed by a drop of 5 per cent. cocain and were then easily removed. In five of the six cases the right eye was affected and the left eye only in one. I removed in one case four, in three cases three, and in two cases two bodies of about 1 mm. long by 0.3 mm. broad which were recognized as fly larvae. After the extraction of the larvae the pain ceased immediately and the conjunctiva returned to its normal state.

In one case reported by Betti, in which the larvae were deposited in the eye, the entrance of the nose and the throat, otitis media followed, but on the whole we can say that larvae, even when of a dangerous type, will not do much harm if removed at a sufficiently early stage. Thus in Lotin's case the larva was that of *sarcophila wohlfarti*, in Kaiser's that of a *sarcophaga*, and in Guzmann's that of *lucilia sericata*, yet, in spite of all of them being known as tissue destroyers, only conjunctivitis was caused.

The fact that in the cases observed by me the larvae could be retained in the conjunctival sac for two days without any destructive action seems to indicate that they have no rapid injurious effect on the human eye.

In two of my cases I was accidentally prevented from deter-

mining the exact nature of the insect. In two other cases the larvae were identified by I. C. Nielsen as first stage larvae of *rhinoestrus purpureus de geer* (also known as *rhinoestrus purpureus brauer*) which is said to be a frequent cause of ophthalmomyiasis in Russia and Siberia. In one case the larvae were sent by Dr. Buxton to Major W. S. Patton, of Edinburgh, who identified them as first stage larvae of *oestrus ovis*. The larvae in the last case were also sent to Major Patton, who has not yet reported on them. Professor Fuelleborn, who discovered the first case of ophthalmomyiasis in Northern France during the war, saw the larvae identified by Nielsen, and considers that owing to some slight differences when compared with those of *rhinoestrus purpureus*, they may belong to another closely related species of fly. He also thinks that the case described by Betti (identified by Betti as *oestrus ovis*), and that described by Kaiser (identified as *sarcophaga*), as also the " Thimni " disease of the eye found in Algiers and the Central Sahara, and thought by the brothers Sergent to be due to *oestrus ovis*, were all caused by the *rhinoestrus purpureus*. On the other hand, Major Patton, in his report on my larvae, says that he does not believe that *rhinoestrus purpureus* occurs in the human eye at all, and the previous records are due to faulty identification.

The question of the deposition of the larvae by the adult fly is, in my opinion, answered in the affirmative by the nature of the pain which begins immediately and remains of the same character. The flies of the genus *sarcophaga* and the tsetse fly are known to be larviparous. Betti considers that the eggs of *oestrus ovis* ripen on the surface of the female and in the process of flying are thrown against the eye or its surroundings.

The ages of my cases were as follows:—8, 14, 17, 35, 36, 43. Four of them occurred in the summer, one in October and one in December. In all of my cases the disease began suddenly while the patient was out of doors and awake; the first in the garden while the patient was ironing, the second while the patient was sitting under a tree, as was also the case with the sixth, the third while the patient was entering a carriage, and in the fourth the patient was also out of doors.

In dealing with ophthalmomyiasis I have only met with cases in which the symptoms pointed to conjunctivitis accompanied by the irritation of foreign bodies. In tropical countries tumour-like formations in the conjunctiva and neighbourhood of the lacrimal glands were recorded by Klyt, and in the neighbourhood of the inner canthus by Gradenigo and Gann. Lagleyze has also recorded cases of furuncle-like disease of the upper lid, and Moura and Croussard have observed infection of the lacrimal sac. Dr. Mancini, of Jerusalem, tells me that he once treated a patient with

an abscess on the right cheek with a small fistulous opening near the lower border of the orbit. The sac, when opened, proved to be full of larvae.

The following are the records of my cases :—

CASE 1. J. K., a woman of 36, who had not had any previous eye complaint, felt a sudden pain in the right eye while ironing in the garden. The sensation was that of the entry of a foreign body with continually increasing pain. On examination there were present slight oedema of the lids with conjunctival swelling and ciliary injection with slight chemosis. The conjunctival fornix was swollen and small conjunctival haemorrhages were present. These symptoms were confined to the right eye, the left eye being normal. Above the caruncle focal illumination showed a small foreign body resembling a flake of mucus. This, on attempted removal, was found to be adherent and, on closer observation, showed slight contractile movements. After anaesthetizing the conjunctiva the foreign body was easily detached and placed on a slide. The movements, which had stopped under the influence of cocain, then recommenced and continued as long as it was kept moist with tears or normal saline. Two more similar bodies were removed from the upper fornix. I instructed the patient to return again on the following day as, on account of the small size and transparent nature of the foreign bodies, I was not sure that I had removed all. The irritation started again in the night, and two more larvae were removed next morning. After three days' treatment with protargol and yellow oxide ointment the patient was cured. The entomological examination made at Hamburg, through the kindness of Professor Muehlens, revealed the presence of an oestrus-like larva.

CASE 2. A. B., a man of 35, was seen on July 14, 1915. He stated that on the previous day while sitting under a tree he felt a slight blow on his right eye. From this eye three larvae were removed.

CASE 3. A. S., a man of 17, was seen by me on July 15, 1915. He stated that on the previous day when entering a carriage a fly had struck his left eye causing pain that had continued. I could find only one larva. The examination was difficult on account of the presence of muco-purulent conjunctivitis (Koch-Weeks) and trachoma. The larva was lost sight of in a clot of pus. After the flake of pus had been in physiological salt solution for some hours the larva was visible and showed lively movements. J. C. Nielsen, of Copenhagen, identified, the larva as that of *rhinoestrus purpureus* in the first stage.

CASE 4. H. A., a girl of 14, was seen by me on July 3, 1921. She complained of a scratching sensation in her right eye

beginning the day before. Two days before she thought something had fallen into the eye. I found old trachoma in both eyes. In the right eye I found a small white moving body which escaped on attempted removal, but ceased to move after the application of cocain, and was then readily removed with a Daviel spoon. Four more larvae were removed in this way. Beyond small conjunctival haemorrhages the eye showed no reaction and had quite recovered after three days' treatment with yellow oxide ointment. W. J. Patton identified the larvae as first stage larvae of *oestrus ovis*.

CASE 5. A. M., a boy of 8, came to me on October 23, 1921, and said that on the previous day while playing in the garden he suddenly felt severe pain in the right eye. I found that he had muco-purulent conjunctivitis (probably Koch-Weeks). I saw a larva in the upper fornix of the right eye which I removed after the use of cocain, but lost it after removal.

CASE 6. P. R., a man of 43, consulted me on December 12, 1922. He stated that on the previous sunny day while in his garden a fly of the size of a " wine-fly " struck the inner corner of his right eye. The pain increased by midnight, but was never very severe. I found much swelling of the upper lid of the right eye with conjunctival chemosis. At the middle of the lower margin of the cornea I found a larva fixed by its darker tail end, while the opposite end was moving. Two other larvae were found in the fornix near the lacrimal gland. These were removed after anaesthetization and placed in physiological saline. They have been sent to Mr. Patton. The conjunctiva was almost normal on the following day.

Ophthalmomyiasis of the inner eye in which the eye is the only organ containing larvae has not so far come under my observation. Six cases have been recorded as occurring in Europe. In three of these (Staehlberg, Krautner, Evetzki-Kennel) the larvae were in the anterior chamber; in the other three (Hess-Grenberg, G. Behr, v. Schmidt zu Wellenberg) in the posterior part of the eye. In the case described by Evetzki-Kennel the larvae were not identified; in the other five cases they were considered to be first stage larvae of *hypoderma bovis*. The patients were all under ten years of age.

In the Estrid disease in Europe the position of the larvae in the eye was the decisive factor in the result. It is astonishing how well the anterior chamber tolerated the larvae. Pain and iritis at intervals were the main symptoms, and, even after long duration of the affection the eye could be saved after removal of the larvae from the anterior chamber. On the other hand, in cases of ophthalmomyiasis interior posterior, diagnosis was impossible on account of the resulting opacity of the vitreous and the deposit on the back of the cornea. In two cases histological examination

showed suppurative choroiditis with detached retina, and, in another exudative choroiditis.

As regards the manner in which the larvae reached the posterior part of the eye there are three possible methods; first the direct way through the cornea, which, according to Kuznezow, can be frequently observed in Central Asia; secondly, as in Schmidt zu Wellenburg's case, through the sclera (in this case reaching the sclera from the cheek), and, lastly, through the blood-vessels and lymphatics, as Hess believed occurred in his case.

Ophthalmomyiasis may also be a secondary disease, the result of skin myiasis (creeping disease) or a consequence of myiasis of the nose with larvae boring into the orbit and destroying the eyes and causing septic meningitis. It may also result from a general myiasis which may attack unconscious or drunken persons sleeping out of doors. Patients suffering from ozoena are particularly liable to attack (Schultz-Zehden).

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A further reference will be found in v. Schmidt zu Wellenburg's paper, No. 6.

ANNOTATIONS

Ophthalmia Neonatorum in the Metropolitan Area

The following figures have been issued as the statistics for ophthalmia neonatorum in the Metropolitan area, together with the numbers admitted to St. Margaret's Hospital for Ophthalmia Neonatorum under the Metropolitan Asylums Board:—

Year.	Cases of ophthalmia neonatorum notified in the Metropolitan area.	Cases admitted to St. Margaret's Hospital for ophthalmia neonatorum.
1919	870	281
1920	1186	252
1921	1076	213
1922	866	213

There is no doubt that after the war there was a great increase of venereal disease, which is reflected in the number of cases of ophthalmia neonatorum which occurred.

The venereal clinics and the better education of the public with regard to preventive measures have apparently caused some decrease in their numbers. At the same time we must keep in mind that all cases of ophthalmia neonatorum are not due to the gonococcus, and that the 60 per cent., given in most statistics, holds good for the cases admitted to St. Margaret's Hospital.

When St. Margaret's Hospital was first opened the accommodation provided was barely sufficient to cope with the number of cases admitted, but the addition of two large open-air balconies for the accommodation of the infants who are admitted in a poor state of health without the mothers, added 24 more cots to the Institute with the result that there are now available 40 cots and 16 beds. Since these additional beds have been added, the hospital has never been worked at its full capacity, although according to the notifications there are more than a sufficient number of cases to fill it.

There are a number of reasons for this.

First, this Institution is still by no means known to the whole of the medical profession; secondly, a number of the cases notified are of the very mildest type and do not require institutional treatment; thirdly, cases are no doubt in some instances efficiently treated at home; fourthly, some hospitals still undertake the treatment of the cases as out-patients; and, fifthly, it has been said that this hospital is liable to become known as an institution for venereal disease. With regard to the last criticism, although some mothers must necessarily know the nature of the disease from which they are suffering, strict precautions are taken against their informing other patients who are admitted to the hospital. No doubt it would be better that the name of the disease should be masked by calling the institutions " Infant Welfare Centres " rather than hospitals for ophthalmia neonatorum.

The State Recognition of Opticians

If any confirmation of the wisdom of the recent recommendation of the Council of British Ophthalmologists on the question of the official recognition of opticians were required it is supplied by a case reported from Queensland where a scheme of this nature is in operation. The case is published by Dr. J. Lockhart Gibson, of Brisbane, in the *Medical Journal of Australia* for January 14, 1922. The patient was a girl of eight. Shortly before she came under Dr. Lockhart's care her parents had been advised to take

her to see an oculist as the right eye was blind. The mother, instead, took her to an optician. The optician, after examining the eyes, was asked by the mother whether she ought to take the child to a doctor. " Quite unnecessary," he said, " we see many such cases." Fortunately, in this particular case, the mother was not satisfied and brought the child to see Dr. Lockhart, who found an advanced glioma of the retina. In commenting on the case Lockhart says, " we cannot, of course, blame the optician for not knowing that the eye was in a serious state and a danger to the child, because an optician, however expert in the grinding of lenses and preparation of spectacles, could not possibly have any opinion of value on the real state of an eye. Prior to the registration of opticians as sight-testers, the blame would have rested on the parents of the child, had they been satisfied with the optician's opinion. It is impossible to avoid the belief that the blame now would have rested on the Government which registered him. . . . Opticians in Queensland have been placed in a false position. Were chemists to be registered to prescribe medicines, they would be placed in an exactly parallel position and one which the whole profession would understand." This certainly does not over-state the case. Such a case as this is doubtless a very glaring example and one in which life itself was involved, but cases in which such conditions as glaucoma would not be recognized at the period when treatment is likely to be successful would be only too common. It is to be hoped that no British Government will be so foolish as to give way on a question so vitally affecting the interests of the nation.

ABSTRACTS

I.—TUBEROSE SCLEROSIS WITH EYE COMPLICATIONS

van der Hoeve, J. (Leyden).—Ocular new-growths in tuberose sclerosis of the brain. [Augengeschwülste bei der tuberöse, Hirnsclerose (Bournville.)] *Arch. f. Ophthal.*, Vol. CV.

van der Hoeve examined the eyes of a girl, 17 years of age, suffering from tuberose sclerosis of the brain, a disease described by Bournville in 1880.

He observed multiple, flat, scarcely raised new-growths in the retina, some of which showed concretions on their surface, and a growing tumour of the optic disc.

The changes in the latter were followed from day to day—cysts

were seen to develop in it, to burst, and fill up again repeatedly, while haemorrhages appeared within the tumour mass or in the cysts, or extended into the vitreous and disappeared again and again. It is probable that the fluid filling the cysts was formed in the tumour; the cyst becoming over-distended, its contents burst into the vitreous, as was shown by the subsequent cloudy appearance of the latter which followed. A primary tumour of the optic disc undergoing cystic degeneration has never before been described. The remarkable feature of this unique case was that it was possible to observe that small particles separated from the tumour and fell into the vitreous, and that the cysts burst into the vitreous without causing any alteration in the intraocular tension.

The author found in several other patients with tuberose sclerosis the same flat tumours of the retina and in one a tumour of the optic disc, and thus proved that intraocular new-growths are not a mere coincidence, but, like the tumours found in the heart, kidneys, etc., belong to the symptom-complex of this disease.

This fact is in itself interesting to ophthalmologists, but it may also be useful as an additional sign in clearing up the diagnosis of ill-defined cases of tuberose sclerosis.

THOS. SNOWBALL.

II.—ANTERIOR POLAR CATARACT

Beauvieux and A. Germain (Bordeaux).—Anterior Polar Cataract. Pathological Anatomy and Pathogenesis. (De la Cataracte, polaire Antérieure, Anatomie pathologique et Pathogénie.) *Arch. d'Ophtal.*, May, 1922.

Beauvieux and **Germain's** paper contains the results of an exhaustive study of a specimen of anterior polar cataract in an eye removed for secondary glaucoma. Although not uncommon as a clinical condition, records of histological examination of this form of cataract are comparatively few in number. It was first described by Maître-Jean in 1707 and Brisseau in 1709. The writers give a list of those observers who have published reports, clinical and pathological, since those dates.

They adopt Chauvel's (1874) classification of two clinical types; one in which the opacity projects from the anterior surface of the lens, generally known as pyramidal cataract; the other which shows no such projection, anterior polar cataract, strictly so-called. But they add that this morphological duality, even if it deserves to be

maintained from the clinical point of view, appears to lack confirmation by the rare histological descriptions hitherto published. Whatever its clinical characters, aetiologically anterior polar cataract falls into two groups, congenital and acquired. The author's case belonged to the latter class.

A detailed description of the histological characters of their specimen, illustrated by micro-photographs is given and followed by a comparison of the authors' findings with those of some of the earlier observers, and an interesting review of the chief theories regarding the pathogenesis of the congenital and acquired varieties. The writers' conclusions are as follows:—

(1) *Anatomical.* In all the records, comparatively few in number, of the histological examination of anterior polar cataract the anatomical position of the cataract, both the projecting and non-projecting variety, is given as subcapsular: the difference between these two kinds appearing to be one of dimension only, due to the greater intensity or the longer duration of the inflammatory or toxic process. The case of Onfray and Opin, in which congenital anterior polar cataract was pyramidal in one eye and flat in the other, but subcapsular in both, is one of peculiar interest. The morphological duality, maintained by a certain number of authors, Chauvel in particular, would seem not to be strictly accurate, speaking anatomically. We should not describe pyramidal or *capsular* cataract and anterior polar or *subcapsular* cataract: both are true anterior polar cataract varying in degree, the first the projecting, the second the non-projecting type. The term pyramidal might well be retained, but as a synonym of capsular. Further microscopic examination of this variety of cataract is much to be desired.

(2) *Pathological.* The mode of production of congenital anterior polar cataract is, and probably will be for a long time, problematical. The acquired variety results most frequently from the action of microbic toxins on the young and proliferating subcapsular epithelium; these toxins may penetrate directly by reason of the perforation of a corneal ulcer, or by diffusion through a cornea deeply involved by inflammatory processes but remaining intact in its most posterior layers; in the latter case it is probable that iritis plays the principal rôle in the localisation of the lesion at the anterior pole of the crystalline lens. It is however not only in infancy or early childhood that anterior polar cataract may develop. It appears, though rarely, in adult or even advanced age. In such instances it is almost invariably consecutive to corneal perforation, and injury to the lens brought suddenly into contact with the cornea favours the action of the bacterial toxins.

J. B. LAWFORD.

III.—THE STUDY OF SENILE CATARACT BY GULLSTRAND'S LAMP

Vogt, A. (Basle).—Recent results of the study of senile cataract by means of the lamp of Gullstrand. (Nouveaux resultats fournis par l'étude de la cataracte sénile par la lampe de Gullstrand). *La Clin. Ophtal.*, November and December, 1920, Translated from *Schw. Med. Wochenschr.*, no date given.

Owing to the extreme practical difficulties in the way of making satisfactory microscopic investigations of the lens, Vogt has found it much more useful to make use of the " optical section " by means of Gullstrand's lamp. He gives a detailed description of the various appearances of the lens, and collates these with their pathological meaning. The descriptions in a foreign language are too difficult of exact appreciation to abstract, but by those who possess the apparatus in question they will doubtless be more or less readily followed in the original. The following types are described, namely :—(1) Lacunar spaces (Wasserspalte); (2) Coronary cataract (blue or green cataract, punctate cataract); (3) Peripheral wedge-shaped opacities; (4) Lamellar concentric dissociation; (5) Posterior cataract in the form of a capsule; (6) Diffuse powdery opacities and concentric peripheral opacities; (7) Nuclear cataract. All these varieties Vogt regards as part only of the phenomena of senility. They are often hereditary. Complicated cataract is an aberrant type resulting from external harmful influences, nutritional troubles, and toxic actions or traumatisms. We cannot influence the incidence of senile cataract any more than the incidence of hereditary cataract, early greyness or early baldness.

With regard to nuclear cataract, Vogt says that it is only since the employment of the Gullstrand lamp that we have recognized the frequency of this type. Even modern writers have declared that the nucleus is not involved in cortical cataract. The lamp shows that the contrary is the case, for it allows us to determine the increase in the internal reflexion of any determined zone of the lens. Vogt gives details showing how opacity of the nucleus (apart from sclerosis) may be determined by the lamp.

ERNEST THOMSON.

IV.—OPHTHALMOSCOPY OF THE NORMAL EYE BY MEANS OF RED-FREE LIGHT

Koby, F.-Ed. (Basle).—Ophthalmoscopy of the normal eye by means of red-free light. (L'ophtalmoscopie de l'oeil normal à la lumière privée de rayons rouges.) *Revue Générale d'Ophtal.*, January, 1920.

We need not follow the author in his account of the particular apparatus employed to give a light from which the red rays have been eliminated, nor attempt to analyse his account of the discussions which have taken place as to the causation of the colour of the yellow spot region. His conclusions are, that by means of the light arranged by Vogt, of Basle, it becomes possible to see the yellow colour *in vivo*, the expansion of the nerve fibres and the details of the retina. But just because it shows up the retina and largely obscures the choroid, it is useful in coming to a conclusion as to whether any particular point is retinal or choroidal. With regard to the yellow spot, red-free light shows it up as yellow on a green ground, and it does so even in cases of chorio-retinitis where, with ordinary light, the yellow spot is completely invisible. The yellow colour as thus examined is seen to extend over an area equal to one third of the disc in size. According to the exact composition of the light filter the tint varies from lemon yellow to orange yellow. The spot is round or slightly oval, with the major axis horizontal. An excellent plate shows the general green colour of the fundus, the yellow spot in a darker green area, and the striation of the fundus corresponding to the spreading out of the nerve fibres.

ERNEST THOMSON.

V.—OXYCEPHALY AND DWARFISM

Isola, Butler and Mussio, Fournier. — Oxycephaly and Dwarfism. (Oxycephalie et Nanisme.) University of Montevideo, *Anales de la Facultad de Medicina*, Tomo 5, 1920.

The authors give an elaborate paper on a case of oxycephaly and dwarfism occurring in a female of Uruguayan descent. The patient was 21 years of age at the time of examination. The mother had had three miscarriages and four other children, who died very soon after birth. The patient was born after a normal labour and was breast fed; dentition, speech and the power of

locomotion developed at the customary age. At the age of twenty months the child suffered from whooping cough; at twenty-five months after birth vomiting, headache and deterioration of sight set in; there was no history of fits at this time, but exophthalmos was early noticed. In 1899 the case was examined by Professor Morquio, who found bilateral optic atrophy of a post-neuritic type. Menstruation had appeared at the age of eleven years and had always been excessive.

Very full tables of anthropometrical measurements are given, and it is stated that the Wassermann reaction was negative both as regards the blood and in the cerebro-spinal fluid.

A considerable part of the paper is devoted to the radiographic examination of the head, which showed marked alterations from the normal conformation of the basilar region of the skull; these comprised extreme shortening of the frontal base, between the orbital arch and the posterior border of the great wing of the sphenoid, marked basilar lordosis without deformity of the sella Turcica, absence of the mastoid cells and the frontal sinus, and foci of rarefied osteitis all over the vault of the skull, this last feature giving rise to the radiographic picture of "*impressions digitales*," of which an excellent plate is appended, as are pictures, full face and side view of the patient, and a schema of the skull.

The paper forms a valuable record of an interesting and not very common type of case.

R. R. JAMES.

VI.—BURNS OF THE CONJUNCTIVA BY YPERITE

Dor, L. and Fouassier (Lyons).—Remote results of burns of the conjunctiva by yperite. (Suites éloignées des brûlures conjonctivales par l'ypérite.) *La Clin. ophtal.*, April, 1922.

Dor and Fouassier present three plates of drawings showing the ultimate conjunctival effects of gassing by yperite. These ultimate results consist in the persistence of abnormal vessels of new formation which represent the vestigia of the repair efforts of the tissues injured by the burns caused by the gas. These vessels, usually filiform, stand out in brilliant red on the conjunctiva, which is more or less adherent to the sclera, or even on the bared sclera itself, which presents a characteristic pearly-white appearance. Those patients who have been least affected by the gas complain of attacks of conjunctivitis of slight duration, but often repeated. Others who have been severely gassed, who have remained with eyes closed for a month or more due to palpebral oedema and

intense photophobia, and who have been treated for many months, suffer from constant photophobia and continual lacrimation which are exacerbated by the least cause of irritation. Work in bright daylight or artificial light is painful. If they are exposed to dust or to inclement weather their work is stopped for weeks. If such a patient works in an office or is in a sedentary occupation, protected from the weather, he will merely be slightly incommoded; but if he is obliged constantly to work in the open air, subject to exposure to wind, sun and dust, it may become quite impossible for him to continue at his usual occupation. It, therefore, seems only just that there should be sufficiently large compensation for these cases.

ERNEST THOMSON.

VII—TREATMENT OF GONOCOCCAL CONJUNCTIVITIS

Allisson, F. H. (Geneva). — Heterobacteriotherapy in gonococcal conjunctivitis of adults. (L'hétérobactériothérapie dans la conjonctivite gonococcique de l'adulte.) *Revue Générale d'Ophtal.*, March, 1922.

In 1910 Darier announced that every antitoxic serum, in addition to its specific action, possesses undeniably the property of giving to every organism, invaded by no matter what infective agent, general means of defence which can neutralize, or more or less attenuate most of the morbid symptoms caused by the microbe in question. Bloch treated three cases of gonococcal arthritis by intra-muscular injections of typhoid vaccine (of Pfeiffer-Kolle). He obtained a complete cure. von Szily and Sternberg were the first to employ injections of typhoid vaccine in the treatment of gonococcal conjunctivitis. In 1917 these authors published the good results obtained in 12 cases of adult gonococcal conjunctivitis. Shortly after the injection they found hyperaemia of the affected eye. A few hours later the oedema of the eyelids diminished, pain became less, and, in between 10 and 48 hours the gonococci disappeared from the secretion. In the following year von Szily and Sternberg published the results in 40 cases. In 20 who had no corneal lesions the disease was aborted. Of the 20 who had corneal lesions 14 were cured with more or less extensive corneal scars. In the remaining 6, the cornea having been infiltrated from the very beginning, perforation took place. The authors consider that there is no other treatment of this disease which causes such a rapid disappearance of the palpebral oedema, and of the gonococci from the secretion. Local therapeusis is unnecessary.

Allisson has tried this treatment in 3 cases, of which particulars are given. The first case was extremely unfavourable on account of a severe traumatism and late application of the vaccine, and the result was bad, as is so commonly the case. The other two cases did well, and Allisson is satisfied with the success of the treatment. There was a rise of temperature in each case after the injection, reaching in the three cases respectively 38.4° C., 38.6° C., and 39.6° C.

The following is the method of preparation of the vaccine according to von Szily and Sternberg. Five agar tubes having a surface of about 5 square centimetres are inoculated each with 2 milligrammes of freshly prepared typhoid bacilli. After 24 hours the cultures thus obtained are diluted in 200 cubic centimetres of a solution of chloride of sodium. The emulsion is shaken for half an hour, and carbolic acid is added to ½ per cent. (*et l'on ajoute de l'acide phénique à ½ pour cent.*). The vaccine thus obtained can be kept for months.

ERNEST THOMSON.

VIII—THE RE-EDUCATION OF THE BLINDED

Lawson, Sir Arnold (London).—On the re-education of the blinded, with special reference to the blinded sailor and soldier. *Lancet*, September 10, 1921.

It is practically impossible to do any kind of justice in an abstract to this most interesting article based on experience at St. Dunstan's. A few notes, mainly in the author's own words, may help one to appreciate its value in educating the medical practitioner as to what is now possible to be done for the blinded adult. After pointing out the difficulties of re-education—so much greater in the adult, and especially the middle-aged or elderly adult, than in the child—**Lawson** considers the categories of blindness. For the purposes of training, he says, a man may be defined as blind when his sight is so bad that he is unable to earn an independent livelihood. Such blind people can be divided into three categories: (a) those who have completely lost their sight; (b) those who still retain fragments of vision but no useful sight; (c) those who still possess some useful sight, vision that enables them to get about without aid, and to recognise large objects close at hand, but insufficient to enable them to earn their living as sighted men. The first of these classes is the most satisfactory from the point of view of training, the third the least so. Before re-education in the sense of intellectual or manual instruction can be commenced there must be re-education of the patient's moral sense. He must

be taught to recover his lost independence and to regard his difficulties, not as disabling, but as inconveniences which can largely be discounted. The association of comrades in blindness, all of whom are at St. Dunstan's for the overcoming of difficulties, is one of the great secrets of success. Lawson considers that the experience of the last six years has shown conclusively that colleges or communities for the blind are the first essentials in re-education. The methods by which the patient is given confidence in finding his way about the hostel are next indicated. These include special floor coverings, the differences of which can easily be detected. Neatness in feeding and personal cleanliness and tidiness are obtained partly by the aid of teachers and partly by the fact that the patient is one of a community where these points " receive attention and excite comment." The uses of social intercourse are great. The old proverb about the " blind helping the blind " should, in the author's opinion, be cut out of the wise sayings, for the experienced blind can and do help the inexperienced. The advantages of social life are further exemplified by the relaxations, distractions and amusements which are possible in a college for the blind. Lawson next speaks of the pains taken at St. Dunstan's to provide all kinds of relaxation and amusement. These include dancing, singing and instrumental music on the one hand, and rowing and sculling on the other. Some of the outdoor amusements would seem " utterly impossible." The case is related of an excellent golfer " who stuck to his game even after he had become completely blind. He found that after practice he could, aided by directions from a good caddie, continue to drive a straight ball and pitch fairly accurately to the green, and when there he would measure the distance from ball to hole and test the green by walking from one to the other, then proceeding to putt guided by the sound made by the caddie striking the tin with an iron club."

Coming next to the actual training. This must be considered from two points of view, that designed to cultivate the intellect and that intended to provide a means of livelihood. The first chiefly concerns the learning of Braille and the typewriter. Braille learning is often disappointing, especially in those over 40 years; and even the young man, if of the labouring class, has rarely either the intellectual ability or the necessary delicacy of touch. Braille seems to appeal very little to intellectual people. " It takes too much thought, and the man tired from brain work all day cannot, as a rule, be bothered with it at night as a means of relaxation." Typewriting, on the other hand, seems to appeal to every blinded person. The second kind of training, namely, as a means to a livelihood, has been greatly stimulated by the war and the consequent necessity of providing a sustaining interest in

life for blinded officers; something more than mat, brush and basket making. Owing to Sir Arthur Pearson's intellect and powers of organisation, the question now is not what the blind may be taught, but rather what they cannot be taught. But, in the training of the majority, those who belong to the humbler walks in life, the selection of a suitable livelihood requires considerable care. For manual labourers brush and basket making and boot repairing cannot be improved upon. Carpentry and even joinery are also taught at St. Dunstan's. Massage is open to those with some social qualifications and refinement, and who have sufficient education to pass the examinations. Poultry farming has also been very successful. Thanks to Captain Webber, himself totally blind for many years, the men learn to handle and appreciate the different kinds of fowls, to prepare them for the table, the secrets of successful breeding and prolific egg production, and, in fact, everything that a sighted man might know on the subject. Again, pianoforte tuning has for long been recognised as a suitable calling for those gifted with a musical ear. It has to be remembered in the training of the blind that, owing to the more intense mental concentration required the hours of work must be short, and that consequently provision must be made for the hours of spare time. All St. Dunstan's men are taught string-bag making and netting. Playing cards also can be marked with Braille notation. The average stay of a man at St. Dunstan's is about a year.

Lawson then considers certain difficulties of the blind craftsman, and his after care. These important paragraphs should be read in the original. He deals also in a short paragraph with the untrainable blind, those who, on account of age, infirmities, mutilation or some consecutive disease, cannot be trained to earn an independent livelihood. "Quite a number of elderly men past 50 years of age who volunteered for labour work during the war were blinded as the result of their unselfish patriotism, and for a certain number of these, together with some who were mutilated in other ways besides being blinded, a permanent and beautiful home has been found at Ilkley in Yorkshire. Here they are maintained in comfort and everything possible is done to mitigate their lot." The author refers very feelingly to the problem of marriage. Every young blinded man very badly requires a partner to look after him. But it is a great risk. Though marriage is highly desirable the girl must be of the right sort, and the difficulty is to find her. Lawson hopes that in the near future Blind Clubs will be started for the young blind of both sexes who are unmarried and without parents or relatives to provide a home.

ERNEST THOMSON.

IX.—ANKYLOBLEPHARON WITH PRE-CORNEAL CYST

Majewski, Casimir (Cracow).—Total ankyloblepharon with pre-corneal cyst. (Ankyloblepharon total avec kyste précornéen.) *Revue Générale d'Ophtal.*, January, 1921.

This is a very remarkable case in which, presumably and apparently (the aetiology being extremely obscure), as the result of gummatous inflammation, the posterior edges of the eyelids were completely soldered together. Palpation gave so little resistance to the finger that it was supposed the eye must be disorganized behind the adherent eyelids. However, as the fellow eye was almost blind from a somewhat similar condition, in this case keratoblepharon with much opacity of the remaining cornea, **Majewski** decided to operate. Having injected cocain around the region of the eyelids he began to dissect the lids apart from one another. As he did so there was a gush of fluid, and it was concluded by all present that the eye had been opened. This was not so, however, and it turned out that in front of the cornea, and protecting it, there was a cyst. The cornea was found to be in remarkably good condition, only slightly opacified, and it was possible to free the adhesions between the bulbar and palpebral conjunctiva well enough to introduce Illig's prothesis, an apparatus which keeps the lids and eyeball separated, while permitting vision through a hole in the centre. This prothesis was maintained in place, except for daily dressing, for more than a fortnight. The result of the operation has been surprisingly good, the prognosis prior to it having been exceedingly bad, and vision of 6/18 has been maintained.

The nature of the case being so very unusual it is perhaps advisable to transcribe the author's remarks on the aetiology.

" In the proved absence of the usual causes of obliteration of the conjunctival sac (severe trachoma, diphtheritic conjunctivitis, anthrax, pemphigus, etc.) one is obliged to fall back on the assumption of a syphilitic process, probably gummatous, occurring in the conjunctiva—a most exceptional localization!—which has caused with unusual rapidity (about a month) a no less surprising result, namely, a total obliteration of the left palpebral opening with the formation of a pre-corneal cyst and most astonishing preservation of the cornea. Verderame published last year a series of detailed observations on diffuse syphilomata of the bulbar conjunctiva. It is not impossible that, in my patient, a process of this kind—failing sufficiently early treatment—may have brought about the adhesion of the bulbar with the palpebral conjunctiva, while the union of the latter in front of the cornea remained almost unaffected. (*En même temps que la soudure de*

celles-ci au-devant de la cornée reste à peu près intacte.)" The reviewer supposes this to mean that in front of the cornea only the edges of the lids were united, the palpebral conjunctiva in this situation not being adherent to the cornea

The author has great difficulty in explaining the presence of the fluid in a cyst. He points out that in the extra-corneal regions the union of the lids and globe was very loose, and supposes that some of the lacrimal ducts escaped obliteration. As bands of adhesion formed round the cornea between the palpebral and bulbar conjunctiva this lacrimal fluid eventually got shut in and formed the contents of a cyst.

In the final paragraph the author again emphasizes the difficulty of explaining the origin of the condition. Unless syphilis be accepted as the causal agent he is completely nonplussed.

ERNEST THOMSON.

X.—AMAUROSIS CAUSED BY LIGHTNING

Depas (Liége).—Amaurosis caused by lightning. (Amaurose provoquée par la foudre.) *La Clin. ophtal.*, February, 1921.

Depas relates the case of a woman who was in her kitchen when lightning passed through it. She was immediately "blinded," had intense photophobia and blepharospasm and reached Depas with a thick bandage over her eyes because she could not bear the pain caused by any light at all. With great difficulty, in the dark room, it was possible to ascertain that the pupil reflexes were normal; there was almost no vision; later on that the fundi were normal, and later on still, that the fields were normal. Nevertheless, it was nearly a month before the patient's sight became normal. What was the exact cause? Hysteria seemed almost ruled out. There had been no previous manifestation of it. Simulation was most unlikely. The patient was in humble circumstances and was put to considerable expense for what—if the case were one of simulation—was quite unnecessary. Without excluding absolutely these causes the author suggests that in view of our ignorance of the inward *(intime)* mechanism of vision we should admit that under the influence of some disturbing cause this mechanism may be paralysed in its action for some time without actual alteration of the conductivity of the nerve fibres. There is another conclusion that seems to follow, namely, that independently of its special sense properties (*propriétés sensorielles*) the retina must also possess sensation (*propriétés sensitives*). "One cannot otherwise explain the sensation of pain caused by light in this individual in spite of the fact that vision had disappeared and that there was no external lesion which would account for the intense photophobia."

ERNEST THOMSON.

XI.—AUTO-SUGGESTION BLINDNESS

Campbell, Kenneth (London). — A case of auto-suggestion blindness. *Lancet,* August 5, 1922.

" An obsession may be defined as the translation of an idea into a reality," says **Campbell** *á propos* his case. The patient was a man aged 20 years, of good physique and rational in every way. Yet, after being exposed to the flash of an electric " short," he developed the idea that he was quite blind and acted as a blind man. There was no sign of any organic damage, but the patient was greatly distressed, and this distress was being kept up by sympathetic letters from home. The treatment consisted in stopping the excessive sympathy and assuring the patient that the vision would return. Campbell thus expresses it: " I assured him that his vision would come back, and repeated this emphatically daily, going on the principle described in Humpty Dumpty's poem, " I said it very loud and clear, I went and shouted in his ear." After the lapse of a month the sight was quite restored.

ERNEST THOMSON.

XII.—DIRECTION REFLEX OF THE EYES IN READING

Dor, L. (Lyon).—Concerning the direction reflex of the eyes in reading. (A propos du réflexe de direction des yeux dans la lecture). *La Clin. Ophtal.,* August, 1922.

" In a recent article (*Arch. d'ophtal.*, January, 1922) Prof. Bard showed, in connection with a patient who was both aphasic and left hemianopic, that the reflex which occurs at the commencement of reading to bring the eye towards the left has its seat in the cortical centres for speech." Dor adds a case in complement of Bard's observation. His patient was a young woman who was suddenly affected by almost complete hemianopic scotoma of the outer field of the previously emmetropic right eye, and who at the same time had an old standing amblyopia of the left eye, the result of monocular hypermetropic astigmatism. This patient, who could not read a line of a newspaper with either eye, could read fluently enough with both eyes. This was not due to slight increase of visual acuity through binocular vision. The left eye could not read; it could only have a vague perception of lines by peripheral vision, and it was precisely this vague perception which constituted the starting point of a direction reflex of the two eyes

towards the right. Reading was immediately interrupted by suppressing this vague perception by means of a screen before the left eye. The right eye, being no longer incited by the vague perception of a line to be read, stopped at the first letters of the word and was unable to complete it. The condition lasted for a month and preserved the same characteristics, but the partial hemianopia, being due to a retrobulbar lesion dependent on pyorrhoea, became completely cured. The patient was then once more able to read with the right eye alone.

"There exists then," says **Dor,** "in addition to the reflex which recalls the eyes to the left and towards the commencement of the lines, another direction reflex which causes the eyes to travel from left to right, and which is started by the vague perception of the line to be read."

ERNEST THOMSON.

XIII.—DECLINATION

Stevens, C. L. W., M.D.—Declination. *Amer. Jl. of Physiological Optics.* January, 1923.

The author commences by deploring the fact that in the examination of the eyes, in respect to their efficiency as optical instruments, the determination of the refractive condition is so often considered all-sufficient. That this should not be so is obvious, when it is remembered that binocular vision is essentially a muscular function, requiring the finest adjustment of the eyes with regard to each other.

Departures from the most favourable muscular adjustments are said, by those who look for them, to be of as frequent occurrence as errors of refraction.

Excluding pathological conditions affecting the musculature, he then proceeds to discuss the three forms which such departures may assume.

The first mentioned is a disturbance of the relationship of the visual axes, resulting either in a heterophoria, usually readily determined by means of the phorometer, or a heterotropia, where the actual deviation from parallelism is generally quite obvious.

The second is a disturbance of the adjustment of the normal plane of regard, dependent upon the rotating ability of the eyes in various directions, too high an adjustment being designated anaphoria, too low, kataphoria. The rotating ability can be determined by means of the tropometer.

The third is a disturbance of the relationship of the retinal

meridians to the meridians of space, and is termed declination. In other words, if the head be erect, and the eyes directed straight in front, declination would be indicated by a tilting of the eyeball on the antero-posterior axis. The author dilates more fully on this disturbance as the determination of the direction of the retinal meridians would appear to be more especially neglected in functional examinations. Declinations, he believes, are not only in themselves hindrances to good binocular adjustments, but are also the causative forces underlying heterotropic and -phoric conditions. For example, if the declination of the eyes is towards the temple there must be a rotation nasalwards to maintain binocular fusion. The superior obliques can best effect such a rotation, but being abductors, they tend, while so doing, to produce an exophoria.

A description of the clinoscope, an instrument for determining declination, is then given. Its principle is to dissociate each eye from its fellow, and from objects of external space. If each eye thus views a diagram, say, of a circle with an upper vertical radius in the one case, and a circle with a lower vertical radius in the other, in the absence of declination there will be observed a vertical diameter or parallel radii. Its presence, and the amount, can be estimated by the rotation of the diagram necessary to produce this result.

In discussing the treatment of declination, where symptoms demand it, the author holds that the only available method is by operative interference. This should so aim at adjusting anew the insertions of certain tendons that the muscles, with a new point of traction, may be able to produce the necessary rotation of the eyeball.

E. MAXWELL.

XIV.—CORNEAL LESIONS REVEALED BY A BLUE GLASS

Gros, H. (Boulogne-sur-Mer).—The revealing of corneal lesions by means of a blue glass. (Mise en évidence des lésions cornéennes par le verre bleu.) *La Clin. Ophtal.*, November, 1920.

This one page article by **Gros** seems to be of much importance. Corneal lesions stained by fluorescein can hardly be properly shown up by artificial light. Daylight is not always available. If the light be filtered through an ordinary (commercial) blue glass and concentrated on the eye by means of a large lens the parts

impregnated with fluorescein appear with great brilliance on a dark ground, and the smallest details which would have escaped daylight become perfectly visible. If a deep blue glass (of which the spectrum contains red, blue and yellow-green) be employed, and a sufficiently intense beam of light be filtered through it, the fluorescein spots appear brightly illuminated on a red-violet ground. The smallest lesions are revealed, although they escape detection in daylight. If one employs double staining by fluorescein and methylene blue a beautiful picture is obtained. The central dark spot is surrounded by a halo of shining green on a slightly illuminated ground. One can see with accuracy the relation between the parts of the ulcer involving the stroma with those which involve merely the epithelium, and one can easily follow from day to day the therapeutic results obtained.

ERNEST THOMSON.

XV.—KERATOSCOPY

Amsler, Marc (Lausanne).—Keratoscopy. (De la kératoscopie.) *Revue Générale d'Ophtal.*, May, 1921.

Amsler regrets that the Placido disc is passing out of use owing to the employment of the more generally useful ophthalmometer. Nevertheless, the Placido disc is useful just where the ophthalmometer is apt to fail, for instance, where, for any reason, the fixation is bad; where regular astigmatism shows a certain amount of asymmetry so that estimation by the Javal instrument cannot be made accurately; in keratoconus, and in irregular astigmatism. In the last named, by paying attention to the black spot in the centre of the corneal image and to the first white circle only, it may sometimes be found that this central part of the cornea presents regular astigmatism which is capable of correction. In other cases the Placido demonstrates such irregularity at the centre that correction is hopeless. Amsler says that with practice one can recognize with the disc (he is referring especially to a new model designed by the late M. Eperon) a regular astigmatism of 0.75 to 1D.) over and above the physiological astigmatism, and also the inverse astigmatism due to absence of physiological astigmatism. The axis also can be determined to within 5 or 10 degrees. Degrees of astigmatism of the higher values " leap to the eye," says M. Amsler.

ERNEST THOMSON.

XVI.—SQUINT AND EARLY OPERATION

Pollock, W. B. I. (Glasgow).—Squint: The question of early operation. *Lancet*, June 18, 1921.

Pollock has been driven more and more to operate in young children on account of failure to cure the amblyopia by non-operative measures. "Amblyopia may develop rapidly. I have seen it come on in the course of six months, and on the other hand, I have seen it disappear equally rapidly after a successful operation done for a patient who was four years of age." The reviewer thinks that amblyopia may come on in far less than six months. That by the way. Five cases are given in detail, and it is right that the principal facts of these should be given.

Case I.—Three years of age. Angle of squint 50 degrees. Duration four months. V.R. 6/36. L. 6/12 on illiterate types. With glasses V.R. and L. the same. Operation. Squint cured. V.R. 6/12, V.L. 6/6.

Case II.—Four and a half years of age. Angle 35 degrees. Duration two years. V.R. 6/12, V.L. 5/60. V.A. with glasses before operation not stated. Two operations. Squint cured. V.A. with glasses 6/6 in each.

Case III.—Eight years of age. Angle 40 degrees. Duration four years. V.A. with glasses R. 6/24, L. 6/6. Two operations. Squint cured. V.R. 6/6, V.L. 6/3.

Case IV.—Seven years of age. Angle 35-45 degrees. Duration 3½ years. V.A. with glasses R. 6/6, L. 6/18. Three operations. Squint cured. V.L. 6/9 with correction.

Case V.—Five and a half years of age. Angle not stated. Duration three months. V.R. 6/9, L. 4/10. With correction L. 6/60. Three operations resulting in improvement of V.L. to 6/24, not further improved with correction.

In three of the cases occlusion of the good eye was employed for varying periods, but the author asks us to note that in case three in which the V.A. improved from 6/24 to 6/6 occlusion was not employed.

These are on the whole fortunate cases, and the author is to be congratulated upon them. At the same time there are certain objections to the very early operative treatment. These hardly require recapitulation. One feels, however, that it is necessary to criticize the following statement made by the author:—"The one condition is that the squinting eye be put straight, both for near and for distance. The operation is useless unless the eye is made absolutely straight. If there is the slightest squint still present

there is no recovery of function, because the child would again see double, and therefore still suppress the vision of the squinting eye." Does Pollock mean to assert that his technique is so perfect that he can make his operations on young children practically mathematically correct? If so he makes a very unusual claim. If not, then his assertion that the slightest remaining squint would lead to double vision and suppression of the image practically precludes the cure of squint at all. It is probably correct to say that no operator for squint has ever yet performed a mathematically correct operation. When an eye is put into a favourable position Nature will sometimes help, when fusion takes place, and sometimes not, when fusion does not occur. Speaking generally, there is no class of operation in ophthalmology in which even the best operators are less sure of their results or more dependent on Nature for the adjustment of their mistakes and misjudgments, more especially when the squint operation is performed under a general anaesthetic. Pollock's results are quite good, but inasmuch as absolute operative correction of squint is a fallacy—and most markedly so in young children—the reviewer, for one, remains quite unconvinced by his " one condition " quoted above.

ERNEST THOMSON.

XVII.—NIGHT-BLINDNESS IN GLAUCOMA

Blatt, Nikolaus (Marosvasarhely, Siebenburgen).—Hemeralopia as a prognostic symptom in glaucoma. *Wien. Klin. Woch.* August 18, 1921.

Blatt thinks he is the first to call attention to the fact that the onset of night-blindness affords an important indication as to the prognosis in glaucoma.

If the newer type of adaptometer be used, it will be found, he says, to be present in some cases even in the commencement of the disease.

If night-blindness is proved to be present, even though the visual acuity be at the time good, it indicates that the malignancy of these cases as regards tendency to recovery can be influenced neither by operation nor by conservative measures.

If we accustom ourselves to pay attention to night-blindness in glaucoma, we have a valuable guide which will lead us to adopt energetic treatment in such cases, operative if possible.

We should, however, warn our patient that there is no certain remedy for stopping the progress of the disease in such cases.

A. E. J. LISTER.

BOOK NOTICES

Administration, Report and Statistics of the Government Ophthalmic Hospital, Madras, for the Year 1921. Madras; Printed by the Superintendent Government Press. 1922. Price 3 rupees 14 annas.

Major R. E. Wright's report of the Government Ophthalmic Hospital at Madras for 1921 makes interesting reading. The hospital contains 170 beds and the average number of patients a day is 266.47. Consequently, as usual, the surplus sick have to be accommodated in the verandahs. 178 medical students underwent training during the period under review, not to mention post-graduates, etc. It is satisfactory to note that the Poor Fund (supported by voluntary contributions) had a substantial balance at the beginning of the year. The primary object of the Fund is to supply spectacles and to pay transport charges for the destitute.

During the year there were 1,508 cataract operations. Various methods of removing the lens were adopted—the Madras operation with and without iridectomy, linear extraction, Barraquer's method and Smith's expression. The " partial success " and " partial failures " are higher than they would be if patients could be kept in hospital for a longer time, but they usually leave from the tenth to the fourteenth day, and refuse needling. There were 8 cases of primary and 12 of secondary infection. Operation with incomplete conjunctival flap is a distinct advantage if time is no object. A very modified approval is expressed of Barraquer's method, which in 56 cases yielded 38 " successes," 9 " partial successes," 6 " partial failures," and 3 " failures." In 8 of the cases there was loss of vitreous. Barraquer's apparatus has not been found to work well in the climate of Madras.

Glaucoma is treated by Elliot's operation, the only exception being acute secondary glaucoma due to swelling of the cataractous lens, in which a complete broad peripheral iridectomy is made. A general anaesthetic is used when possible in these cases, and the results are very good. Trephining is also performed for staphyloma, usually combined with radial cauterization or conjunctival flap treatment of protuberant scar tissue, and is also adopted in many cases of extensive leucoma adherens following ulcus serpens. Some cases are trephined after cataract extraction from a prophylactic point of view. Other operations mentioned include excision of the lacrymal sac (224), Heisrath's operation for trachoma (79), St. Mark's Hospital operation for trichiasis (39), operations on accessory sinuses (16), and exenterations (8).

Some interesting remarks are made about the books and specimens contained in the Elliot School of Ophthalmology.

The report ends with an account of certain diseases, as keratomalacia, malarial amblyopia, and coloured pictures are given of a case of extensive sub-hyaloid haemorrhage in a lad of 16 years suffering from malaria. Encephalitis lethargica, Mooren's ulcer, the fundus changes of Osler's disease, the serum treatment of trachoma, retinitis proliferans, leprous iritis, retinitis punctata albescens, syphilitic sclero-keratitis, thrombosis of the central vein following pregnancy are described in the report, which reflects credit upon Major R. E. Wright and all concerned in its production.

S. S.

Oftalmologia Tropical. By LIEUT.-COL. R. H. ELLIOT. Edicion Española de la Revista Cubana de Oftalmologia. Translated by Dr. F. M. Fernandez. 8vo 39 pp. + 547, with 123 figures in the text. Habana, Cuba. The Twentieth Century Press. 1922.

The English original of this work was reviewed in our columns in Vol. IV, p. 532. We suppose that its general characters are familiar to our readers. It has already been translated into French, the Spanish translation is to hand, and we understand that a German translation is forthcoming.

The Spanish edition is enriched by a prologue of 18 pages by the doyen of Spanish ophthalmology, the late Dr. J. Santos Fernandez, whose death in August of last year will be fresh in the minds of English ophthalmologists; in this an interesting comparison is drawn between the experience gained by Elliot in India, and that of the author of the foreword in his 45 years' residence in Cuba.

We have nothing but praise for the way in which the translator has performed his part. He has given a faithful rendering into Spanish of the original, and his only error that we have detected is a minor one on page 1, where Kipling's Clapham is printed as Chapman, possibly a printer's slip. The illustrations have come out very well for the most part; printing and paper are good, and the work in its Spanish form is unusually well got up.

R. R. JAMES.

Index of Prognosis and End-Results of Treatment by various Writers. Edited by A. RENDLE SHORT. Third edition, Bristol: Wright. London: Simpkin, Marshall, Hamilton. Kent & Co., Ltd. 1922. Pages 594. Price 42s. net.

In the present edition of this work a new section on ophthalmology has been contributed by Mr. Griffith. As stated in the preface to the first edition, the object of this volume is to set forth the results, and particularly the end results, of various methods of

treatment, and to furnish data by means of which, apart from the question of treatment, the physician may seek to arrive at an accurate forecast of what will probably happen to the individual patient. In seeking to attain this very desirable object, the editor points out that the only possible method is to give authoritative guidance by quoting statistics. As is only natural in a work of this condensed type, not much space can be spared for ophthalmology. The author of this section has elected to deal with cataract, glaucoma, interstitial keratitis and myopia. The articles in the main give a fair straightforward account of the subjects as treated from the point of view of the general practitioner.

We notice that in the article on interstitial keratitis the author states that the intraocular tension is raised in a few cases, and that in these keratectasia is to be feared. The extreme rarity of such an occurrence in interstitial keratitis renders any mention of it in a book of this type inadvisable. The bibliographies appended should either have been omitted or made fuller and more authoritative.

The book should prove of value to the busy general practitioner.

CORRESPONDENCE

GERMAN OPHTHALMOLOGICAL LITERATURE

To the Editor of THE BRITISH JOURNAL OF OPHTHALMOLOGY

SIR,—In justice to Julius Springer will you allow me space to say that I have received an apologetic letter from him acknowledging that I was charged too much for my first copy of Vol. XLVII of the *Jahresbericht,* and explaining how this came about? He says, "This occurrence is a very disagreeable one to me"; he has asked me to return the spare copy to the Hirschwald'sche Buchhandlung, and has undertaken to defray the cost and to return to me the excess money. I may say that I have sent back the spare copy and have asked him to hold the sum in question against the cost of Vols. XLV and XLVI, which I have ordered and which I hope will soon be out.

I am, Sir, Yours truly,

R. R. JAMES.

LONDON.

OBITUARY

WALTER WILLIAM SINCLAIR was born at Aberdeen in 1868. He was the son of Thomas S. Sinclair-Spark, Advocate, of Aberdeen and Banchory. He was never robust, and much of his education was by private tuition abroad. His medical education was at Aberdeen University, where he graduated M.B., C.M., in 1891. Deciding to specialize in ophthalmology, he held the posts of clinical assistant at the Royal Ophthalmic Hospital, Moorfields, and of Senior House Surgeon at the Birmingham and Midland Eye Hospital.

He began to practise in Ipswich as an ophthalmic surgeon in 1896, and was very quickly invited to join the staff of the East Suffolk and Ipswich Hospital as ophthalmic surgeon, an appointment which he held until obliged by failing health to relinquish it in 1920. He continued his private practice until increasing weakness compelled him to take to his bed in November last.

Although so much of his life was spent in England, he remained a thorough Scotsman. His heart was in the Highlands, and he looked forward to spending a few happy years after retirement from active work in the home of his childhood, which he much loved. He married in 1899 and leaves a widow and three daughters.

Although practising in Ipswich, he was a regular attendant at the meetings of the Ophthalmological Society. He had been a Member of the Council and contributed several papers to the *Transactions*.

He had established a great reputation as an ophthalmic surgeon, not only in Ipswich, but throughout the whole of East Anglia, a reputation which was thoroughly deserved. He was most thorough and conscientious in his examination of every patient who came before him, a most accurate diagnostician, and a very skilful operator. His work at the East Suffolk Hospital did very much to enhance the reputation of that Institution, and was fully recognized by the Board of Management, who named the recently established ophthalmic wards the " Sinclair Wards " to perpetuate his memory.

In addition to his professional attainments he was a musician of exceptional ability and did much to encourage music in Ipswich and the neighbourhood. Had he adopted music as his profession there is no doubt he would have attained a very high position in the musical world. He originated the Ipswich Orchestral Society, and conducted at every concert until 1915, when failing health compelled him to relinquish the bâton. His great success as a conductor was recognized by all, and his enthusiasm for music, sympathetic nature, and personal magnetism inspired the Society

to reach the high standard which it has attained. He had a keen sense for literature, and an intimate knowledge of the French language. His literary style was characterized by lucidity of thought and gracefulness and simplicity of diction. He was one of the most modest and unassuming of men, of a nature transparently honest, and straightforward. He thought ill of no one, never harboured an unkind thought or did an unkind action; no trouble was too much for him if he could do a service to a fellow creature. He was universally beloved and respected by all who knew him in every class of life; their feelings are well expressed in the following short extract from the *East Anglian Daily Times* of February 8, the day after his funeral.

"To the large number of people who knew Dr. Sinclair his death has brought a very real sadness. Not only have they lost a skilled physician, and a born exponent of music, but they have lost a friend. It is not given to many of us to possess the gladsome spirit, the ever present sense of humour, and a heart full of human kindness such as were possessed by Sinclair. Yet those who knew him best knew also that these things—the greatest among human possessions—were his abundantly. They knew that in him they had a friend, a real friend, one whose greatest joy was to help others, and who thought evil of no man. Any community must be the poorer by the loss of such a member, but Sinclair's life, devoted to the alleviation of human pain and suffering, his wide humanity, and his gift to us of the uplifting power of music, will live on and inspire others to follow in his footsteps."

HERBERT H. BROWN.

NOTES

Death

ERNEST SIDLER-HUGENIN has died after a long illness at the age of fifty-three years. He was Professor of Clinical Ophthalmology in the University of Zurich and Director of the Cantonal Eye Clinic. Sidler-Hugenin was the leading Swiss authority upon wounds of the eye and their consequences. Hereditary syphilis, glaucoma, tuberculous affections of the eye, myopia, and conjunctivitis petrificans were among the other subjects treated by his prolific pen.

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Royal London Ophthalmic Hospital Past and Present Students' Dinner

THE Annual Dinner, at which 75 were present, was held at the Langham Hotel on February 8. Mr. Cyril Walker, F.R.C.S. (Surgeon to the Bristol Eye Hospital) was in the chair.

Among the guests were Rear-Admiral Sir Robert Hill, K.C.B., Sir William Hale White, K.B.E., Commodore D. Munro, C.I.E., Professor Elliot Smith, F.R.S., Mr. Theodore Luling, Chairman of the Hospital, and Mr. Dyer, Member of the Committee of Management.

The Toast of the evening, "The Hospital and Medical School," was proposed by the Chairman, to which Mr. Theodore Luling and Mr. Hepburn, Dean of the School, replied.

Sir John Parsons proposed the health of the guests, and Sir William Hale White and Sir Robert Hill replied. The health of the Chairman was proposed by Mr. Fisher.

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Glasgow Eye Infirmary

AT a recent meeting of the Court of Directors of the Glasgow Eye Infirmary, it was decided to ask Dr. Leslie Buchanan to become a member of the Court. Dr. Buchanan, who has faithfully served the Infirmary for over 30 years, first as House Surgeon, then as Pathologist and Assistant Surgeon, and later as Surgeon and Consulting Ophthalmic Surgeon, has accepted the invitation. We offer him our congratulations. More than that, we congratulate the Directors on a particularly wise act which will gratify Dr. Buchanan's colleagues, and which is sure to further the efficiency of the Infirmary and to strengthen the bond of common interest between the Directors and the Medical and Surgical Staff.

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Doyne Memorial Lecture

IT is now announced that the subject of Dr. H. M. Traquair's Doyne Lecture to be given on July 6, during the Meeting of the Oxford Ophthalmological Congress, will be "The Differential Characters of Scotomata and their interpretation."

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French Society of Ophthalmology

THE Annual Meeting of the French Society of Ophthalmology will be held this year at Strasbourg, on Monday, June 11, and the following days. A Report on subconjunctival treatment will be presented by Dr. van Lint, of Brussels. A reduction of 50 per cent. will be made in the price of railway fares to those who attend the Congress. Further information may be obtained from Dr. René Onway, 6 Avenue de la Motte-Picquet, Paris.

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The Gifford Edmunds Prize

MR. W. T. HOLMES SPICER is the first winner of this prize. The subject of the essay was, "Parenchymatous Keratitis."

Ophthalmia Neonatorum in Lying-in Hospitals

THE Section of Ophthalmology at the Newcastle-upon-Tyne Annual Meeting of the British Medical Association in 1921 passed a resolution to the following effect: "That, with a view to the prevention and adequate treatment of ophthalmia neonatorum occurring in lying-in hospitals, such hospitals should have upon the active staff an ophthalmic surgeon." The Council of the Association, to which the foregoing was referred, passed the following resolution: "That, with a view to the prevention and adequate treatment of ophthalmia neonatorum occurring in lying-in hospitals, such hospitals should have available the services of an ophthalmic surgeon." This opinion is being forwarded to all lying-in hospitals, the Society of Medical Officers of Health, the Association of Medical Superintendents of Poor Law Infirmaries, the Poor Law Medical Officers' Association of England and Wales, and to the Editor of the *Hospital*.

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Appointments

MR. E. TREACHER COLLINS has been appointed Consulting Surgeon to the Oxford Eye Hospital.

MR. E. R. CHAMBERS has been appointed Ophthalmic Surgeon to the Bristol Royal Infirmary.

MR. F. B. CHAVASSE has been appointed Assistant Surgeon to the Eye Department of the Liverpool Eye and Ear Infirmary.

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Election to the Council of the Royal College of Surgeons of England

THE voting papers for the election of four councillors will be posted to Fellows immediately after the publication of this number, and an opportunity arises for the return of an ophthalmic surgeon by the nomination of Mr. J. Herbert Fisher. There are two special reasons for his election: first, there has been no ophthalmologist on the Council since Mr. Richardson Cross was a member several years ago, and the recent institution of ophthalmic examinations by the college makes a representative especially desirable; secondly, Mr. Fisher's claims for such a position are very strong; he is Senior Surgeon at Moorfields Eye Hospital, the Senior Ophthalmic Surgeon at St. Thomas's, and was recently President of the Ophthalmological Society of the United Kingdom; for many years he was Dean of St. Thomas's Medical School; on committees his opinion is sought and is exceptionally well-balanced, whilst his reputation from ophthalmic work extends beyond the Empire.